REMARKS

Claims 1-30 are pending in the present patent application. Applicant has amended claims 1, 11, and 21. Applicant respectfully requests reconsideration and re-examination of claims 1-30 -*in the present patent application in view of the following amendments and remarks.

Examiner's Rejection of Claims 21-30 under 35 U.S.C. § 112

The Examiner has rejected claims 21-30 under 35 U.S.C. § 112 as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention stating:

> The specification is insufficiently disclosed with respect to a computer program product and its associated computer readable code to enable a skilled artisan to make and or use the subject matter. the specification fails to make clear how the claimed computer readable code controls the satellites, either GPS or GLONASS, to transmit as each of these sets of satellites are already controlled by the respective governments and are not controllable by user intervention.

Applicant has amended independent claim 21. Applicant contends that the examiners rejections are now moot.

The Examiner has rejected claims 21-30 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention stating:

> In claim 21, the language fails to clearly and distinctly set forth the subject matter which the applicant considers inventive. In line 1, the language sets forth "a computer program product comprising", describes a "computer usable medium" and then again describes the "computer program product comprising". This fails to clearly address the claimed subject matter. It is not clear what the "computer program product" represents since the first portion, lines 2-3 appears to describe a position determining program whereas the second portion, lines 4-5, appears to control remote satellites' transmission capabilities (the GPS satellites?), whereas the third portion, lines 6-7, appears to control a remote station's transmission of information, and whereas the forth portion, lines 8-9, appears to control a third device for receiving signals from the satellites and station. It is not clear how a single computer product provides these capabilities when the use is by three remote devices.

Applicant has amended independent claim 21. Applicant contends that the examiners rejections are now moot.

Examiner's Rejection of Claims 1-7, 9-17, 19-27, and 29-30 under 35 U.S.C. § 102

The Examiner has rejected claims 1-6, 11-16, 19, 21-26, and 29 under 35 U.S.C. § 102(b) as being anticipated by Taylor et al. (U.S. Patent No. 4,445,118) stating:

> Taylor et al disclose the claimed system and method including a plurality of satellites 16 configured to transmit signals, a broadcast station antenna 29 configured to transmit an assistance signal and plurality of receiver terminals 14 configured to receive the satellite signals and the assistance signals. The assistance signals may include, as shown in Figure 2, Doppler data, satellites-in-view data and satellites' position data. In view of the similarity in the claimed system and prior art, the computer program product, as best understood, which could be used to perform the steps of the method are inherent.

Applicant respectfully disagrees. Applicant submits that the present invention is patently distinct from Taylor because Taylor does not teach, describe, or suggest every element of the claimed invention. For example, among other things, the system of Taylor lacks the receiver of the present invention. The receiver of the present invention can operate, when the received satellite signals have inadequate SNR, by using only the assistance signal data. During the operation of the positioning system in the present invention, the receiver receives the signals transmitted from the orbiting satellites and the assistance signal transmitted from the broadcast station. If the received satellite signals have inadequate SNR, the receiver will utilize only the data from the assistance signal. By contrast, the system in Taylor is designed such that the user receivers always use both the GPS satellite signal data as well as the aiding signal data. At column 7, lines 5-17, Taylor states, "As shown in Fig. 4, the complete aiding signal on the 1,555 MHz carrier, together with the GPS satellite signals on the 1,575.42 MHz channel, are received at the user terminal receiver [30] by a single antenna [33]... Both signals are passed through a bandpass filter [35] before being amplified in common wide-band RF preamplifier [34] having a

bandwidth and gain sufficiently large to amplify both the GPS spread spectrum signal and the FSK reference signal." Thus, it is evident from Fig. 4 that the user terminal receivers of Taylor always receive and use both the satellite GPS spread spectrum signals and the aiding FSK reference signal.

Therefore, since the system of Taylor cannot at any time operate by using only the aiding signal data, Taylor does not anticipate the claimed invention.

The Examiner has rejected claims 1-7, 9-17, 19-27, and 29-30 under 35 U.S.C. § 102(e) as being anticipated by Krasner (U.S. Patent No. 6,064,336) stating:

> Krasner discloses the claimed system and method for use in a position determining system including a mobile terminal, as shown by Figure 6A, that receives signals from GPS satellites via antenna 613 and signals from a base station via communication antenna 601 in order to determine position with reduced power consumption. The signals from the base station, which is exemplified in Figures 5A and 5B, include Doppler data, identities of satellites in view and/or satellite almanac data. Such data may be derived at the base station or may be obtained from a server site on the Internet. The receiver is suggested to be a 2-way pager or cellular telephone. In view of the similarity in the claimed system and the prior art, the computer program product, as best understood, which could be used to perform the steps of the method are inherent.

Applicant respectfully disagrees. Applicant submits that the present invention is patently distinct from Krasner because Krasner does not teach, describe, or suggest every element of the claimed invention. For example, among other things, the system of Krasner lacks the receiver of the present invention. As described above, the receiver of the present invention can operate, when the received satellite signals have inadequate SNR, by using only the assistance signal data. Conversely, the remote unit receivers of Krasner are designed to always require the use of the GPS satellite signal data transmitted from in view satellites. At column 3, lines 17-26, Krasner states, "... the present invention provides a method for determining the position of a remote GPS receiver by transmitting GPS satellite information, including satellite almanac data, to the remote unit or mobile GPS unit from a basestation via a data communication link. The

satellite almanac data is then used to determine Doppler data for satellites in view of the remote unit. The remote unit uses this Doppler data and received GPS signals from in view satellites to subsequently compute pseudoranges to the satellites." Thus, to operate by successfully computing its pseudoranges, the remote unit receivers of Krasner always require the use of GPS signal data transmitted from in view satellites in conjunction with Doppler data which is derived from the satellite almanac data transmitted via the basestation. However, It should be noted that in instances when conditions of poor reception are present, the receiver of Krasner does allow for the substituted use of buffered data from previously received GPS satellite signals. Krasner states at column 8, lines 39-50, "...the digital snapshot memory [46] captures a record corresponding to a relatively long period of time. The efficient processing of this large block of data using fast convolution methods contributes to the ability of the present invention to process signals at low received levels (e.g., when reception is poor due to a partial blockage from buildings, trees, etc.). All pseudoranges for visible GPS satellites are computed using this same buffered data. This provides improved performance relative to continuous tracking GPS receivers in situations (such as urban blockage conditions) in which the signal amplitude is rapidly changing." Thus, unlike the receivers in the present invention, the receivers of Krasner, in instances of poor reception, will rely on GPS satellite signal buffered data in order to complete their calculations. Whereas, the receivers in the present invention, when the satellite signals have inadequate SNR because of poor reception, will solely use data from the assistance signal transmitted from the broadcast station. Hence, it is apparent that the receivers of Krasner, even though they will use GPS satellite signal buffered data in certain instances, always require the use of the GPS satellite signals.

Therefore, since the receivers of Krasner cannot operate by solely relying on the data from the aiding signal, Krasner does not anticipate the claimed invention.

Examiner's Rejection of Claims under 35 U.S.C. § 103

The Examiner has claims under 35 U.S.C. § 103 as being unpatentable over either one of Krasner or Taylor et al in view of Richton et al. Applicant contends that

CONCLUSION

The Examiner has rejected claims 1-30. Applicant has amended claims 1, 11, and 21. Applicant submits that pending claims 1-30 are now in condition for allowance.

Respectfully submitted,

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CLEAN SET OF CLAIMS

1. A positioning system comprising:

one or more satellites configured to transmit signals;

a broadcast station configured to transmit an assistance signal; and

a receiver configured to receive said signals and said assistance signal.

2. The positioning system of claim 1 wherein said assistance signal includes one or more Doppler frequencies for said satellites.

3. The positioning system of claim 1 wherein said assistance signal includes one or more locations for said satellites.

4. The positioning system of claim 1 wherein said assistance signal includes a list of one or more satellites that are currently available.

5. The positioning system of claim 1 wherein said assistance signal includes one or more navigation bits in said signals from said satellites.

6. The system of claim 1 wherein said receiver is a computing device.

7. The system of claim 6 wherein said computing device is a cellular phone.

8. The system of claim 6 wherein said computing device is a personal digital assistant.

9. The system of claim 1 wherein said signals and said assistance signals are obtained via a computer network.

10. The system of claim 9 wherein said computer network is the Internet.

11. A method for using a positioning system comprising:

transmitting signals from one or more satellites;

transmitting an assistance signal from a broadcast station; and

receiving said signals and said assistance signal with a receiver.

12. The method of claim 11 wherein said assistance signal includes one or more Doppler frequencies for said satellites.

13. The method of claim 11 wherein said assistance signal includes one or more locations for said satellites.

14. The method of claim 11 wherein said assistance signal includes a list of one or more satellites that are currently available.

15. The method of claim 11 wherein said assistance signal includes one or more navigation bits in said signals from said satellites.

16. The method of claim 11 wherein said receiver is a computing device.

17. The method of claim 16 wherein said computing device is a cellular phone.

18. The method of claim 16 wherein said computing device is a personal digital assistant.

19. The method of claim 11 wherein said signals and said assistance signals are obtained via a computer network.

20. The system of claim 19 wherein said computer network is the Internet.

21. A computer program product comprising:

a computer usable medium having computer readable program code embodied therein configured to find the position of an object, said computer program product comprising:

computer readable code configured to cause a computer to transmit signals from one or more satellites;

computer readable code configured to cause a computer to transmit an assistance signal from a broadcast station; and

computer readable code configured to cause a computer to receive said signals and said assistance signal with a receiver.

22. The computer program product of claim 21 wherein said assistance signal includes one or more Doppler frequencies for said satellites.

23. The computer program product of claim 21 wherein said assistance signal includes one or more locations for said satellites.

24. The computer program product of claim 21 wherein said assistance signal includes a list of one or more satellites that are currently available.

Cont.

25. The computer program product of claim 21 wherein said assistance signal includes one or more navigation bits in said signals from said satellites.

26. The computer program product of claim 21 wherein said receiver is a computing device.

27. The computer program product of claim 26 wherein said computing device is a cellular phone.

28. The computer program product of claim 26 wherein said computing device is a personal digital assistant.

29. The computer program product of claim 21 wherein said signals and said assistance signals are obtained via a computer network.

30. The computer program product of claim 29 wherein said computer network is the Internet.